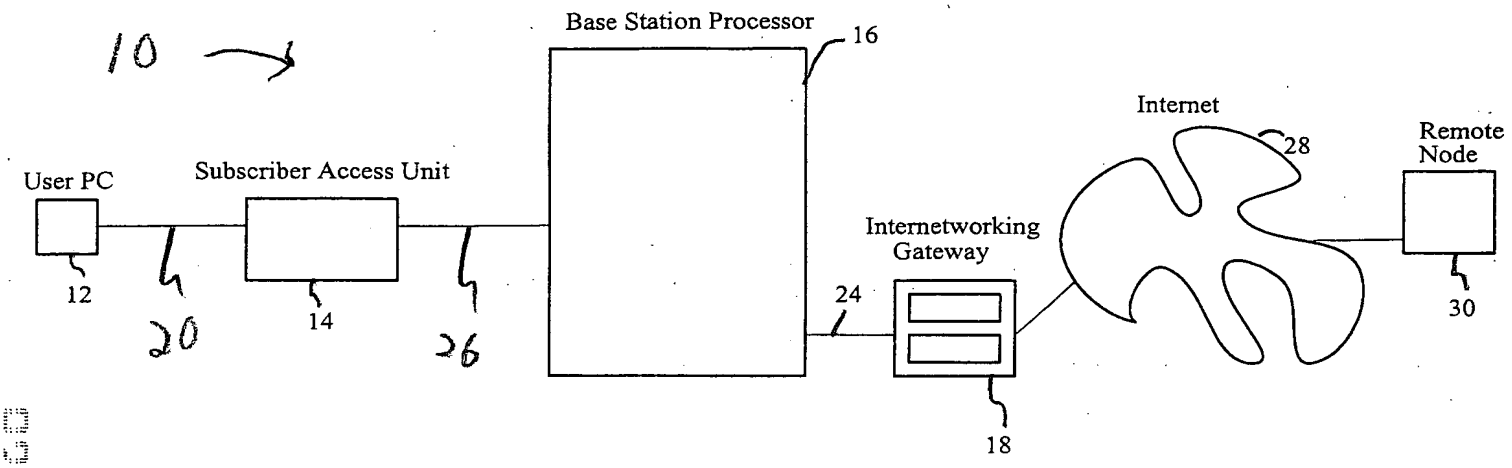
10
Base Station Processor
16
Internet
28
Remote Node
User PC
Subscriber Access Unit
Internetworking Gateway
12
20
14
26
24
30
18

Fig. 1

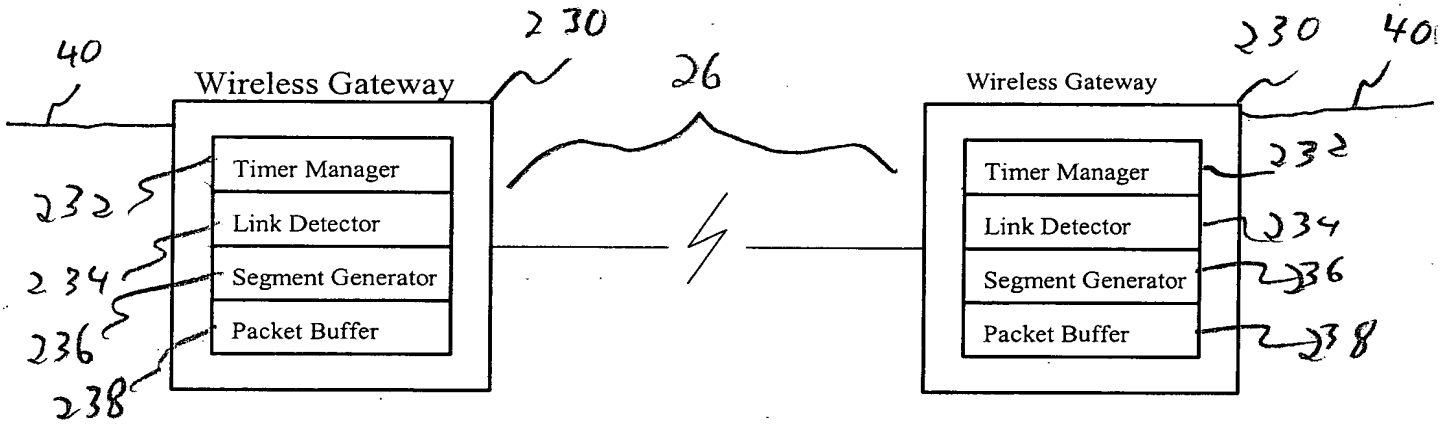
40
230
26
230
40
Wireless Gateway
Wireless Gateway
Timer Manager
Link Detector
Segment Generator
Packet Buffer
232
234
236
238
Timer Manager
Link Detector
Segment Generator
Packet Buffer
232
234
236
238

Fig. 2

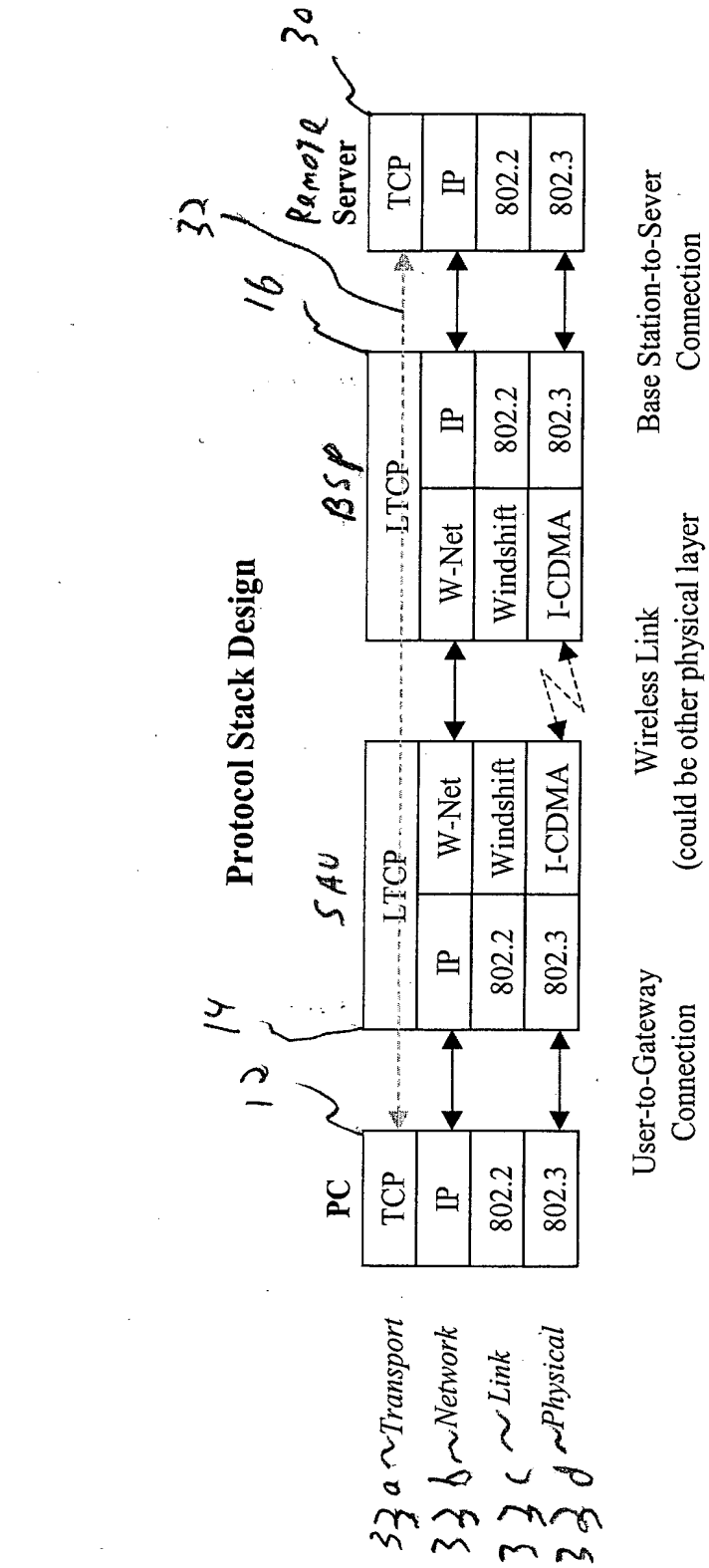
Protocol Stack Design
PC
12
14
SAU
16
BSP
32
Remote Server
30
TCP
IP
802.2
802.3
LTCP
W-Net
Windshift
I-CDMA
33a ~Transport
33b ~Network
33c ~Link
33d ~Physical
User-to-Gateway Connection
Wireless Link (could be other physical layer such as IS-2000)
Base Station-to-Sever Connection

Fig. 3

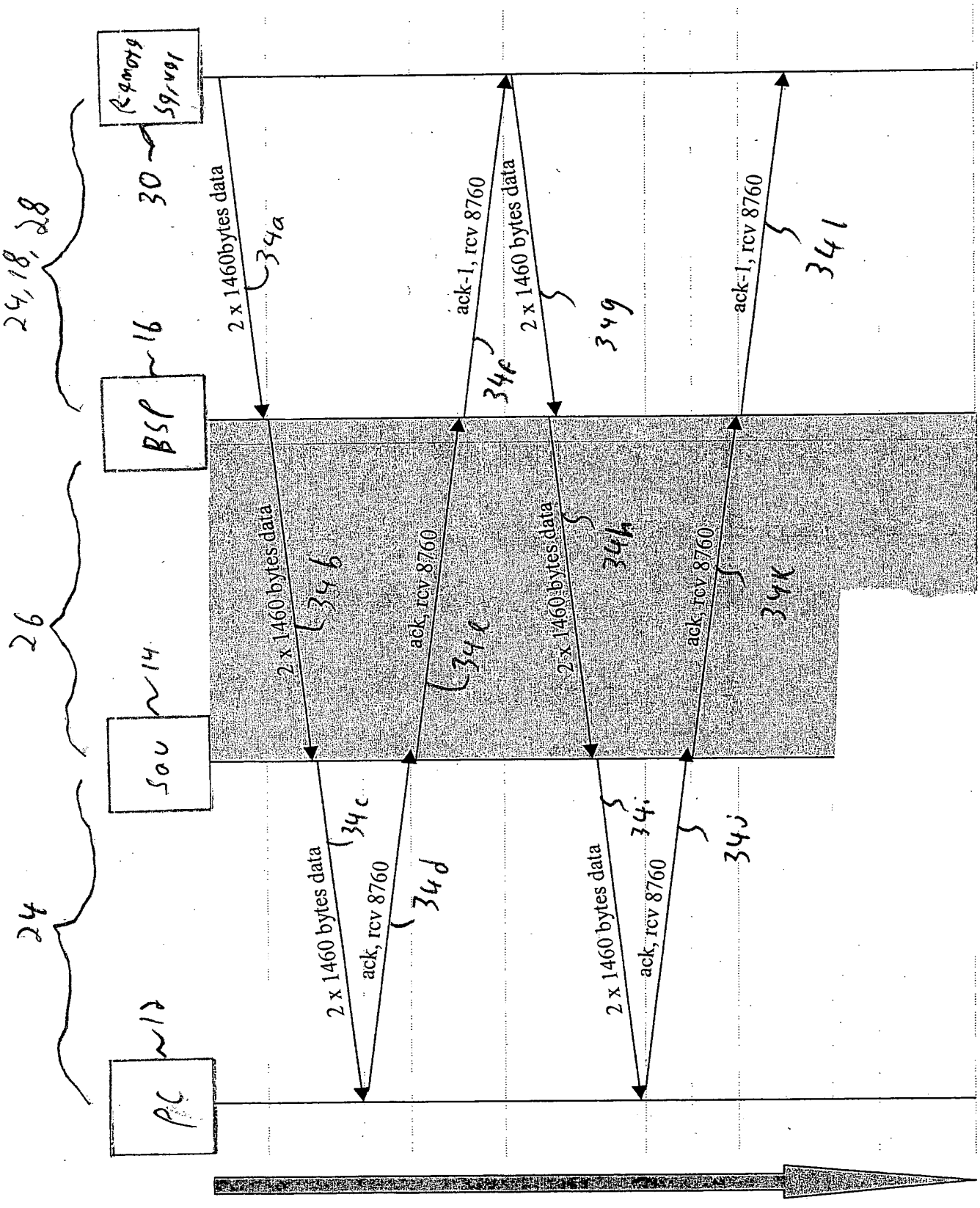
Remote Server
30
24, 18, 28
BSR
16
26
SGW
14
24
PC
12
2 x 1460bytes data
34a
ack-1, rcv 8760
34e
2 x 1460 bytes data
34g
ack-1, rcv 8760
34i
2 x 1460 bytes data
34b
ack, rcv 8760
34c
2 x 1460 bytes data
34h
ack, rcv 8760
34k
2 x 1460 bytes data
34c
ack, rcv 8760
34d
2 x 1460 bytes data
34j
ack, rcv 8760
34l
Time

Fig. 4

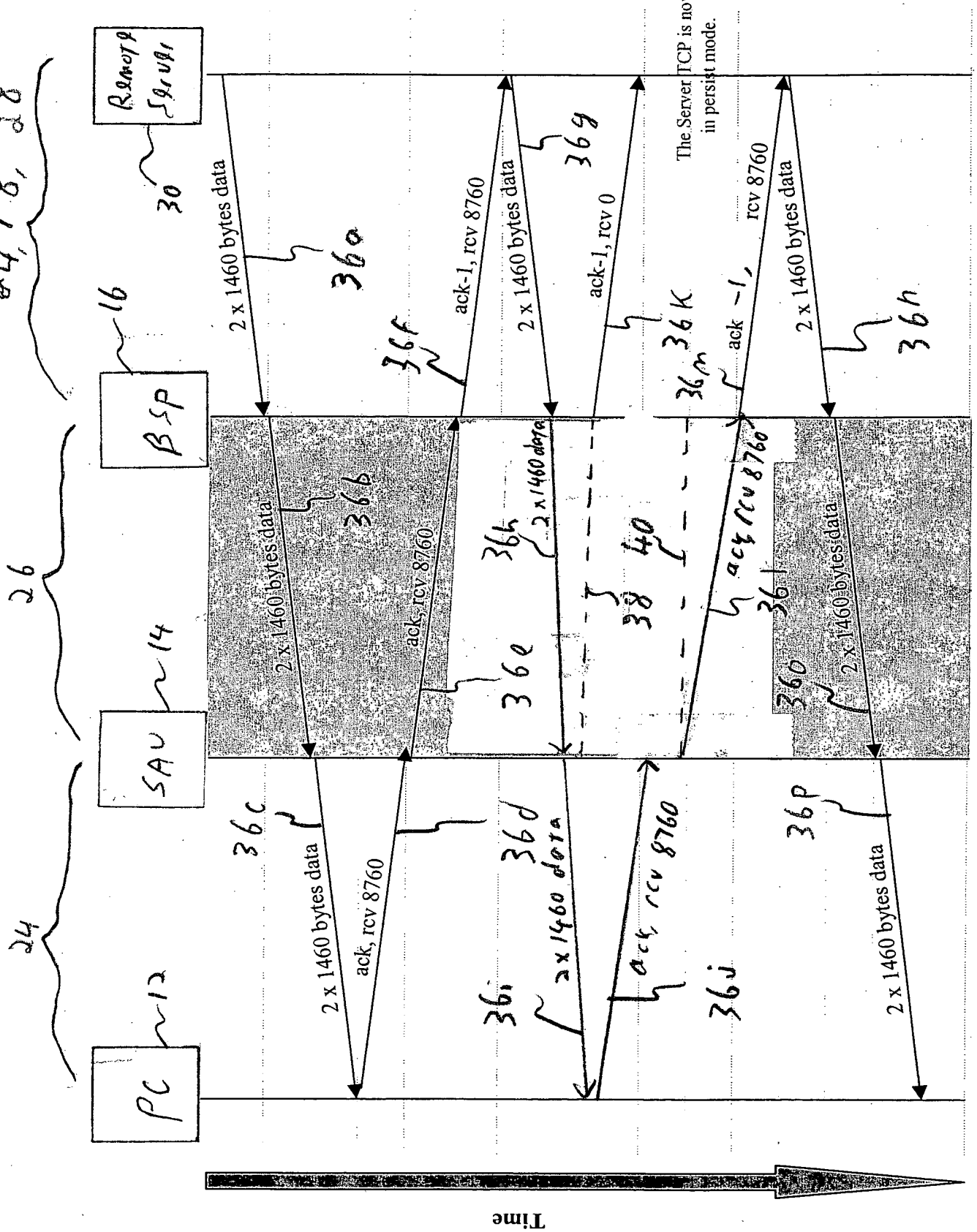
24, 18, 28
26
24
PC
12
SAU
14
BSP
16
Remote Server
30
2 x 1460 bytes data
ack, rcv 8760
2 x 1460 bytes data
ack-1, rcv 8760
2 x 1460 bytes data
ack-1, rcv 0
The Server TCP is now in persist mode.
ack -1, rcv 8760
2 x 1460 bytes data
2 x 1460 bytes data
ack, rcv 8760
2 x 1460 data
ack, rcv 8760
2 x 1460 bytes data
2 x 1460 bytes data
36a
36b
36c
36d
36e
36f
36g
36h
36i
36j
36k
36l
36m
36n
36o
36p
38
40
Time

Fig. 5

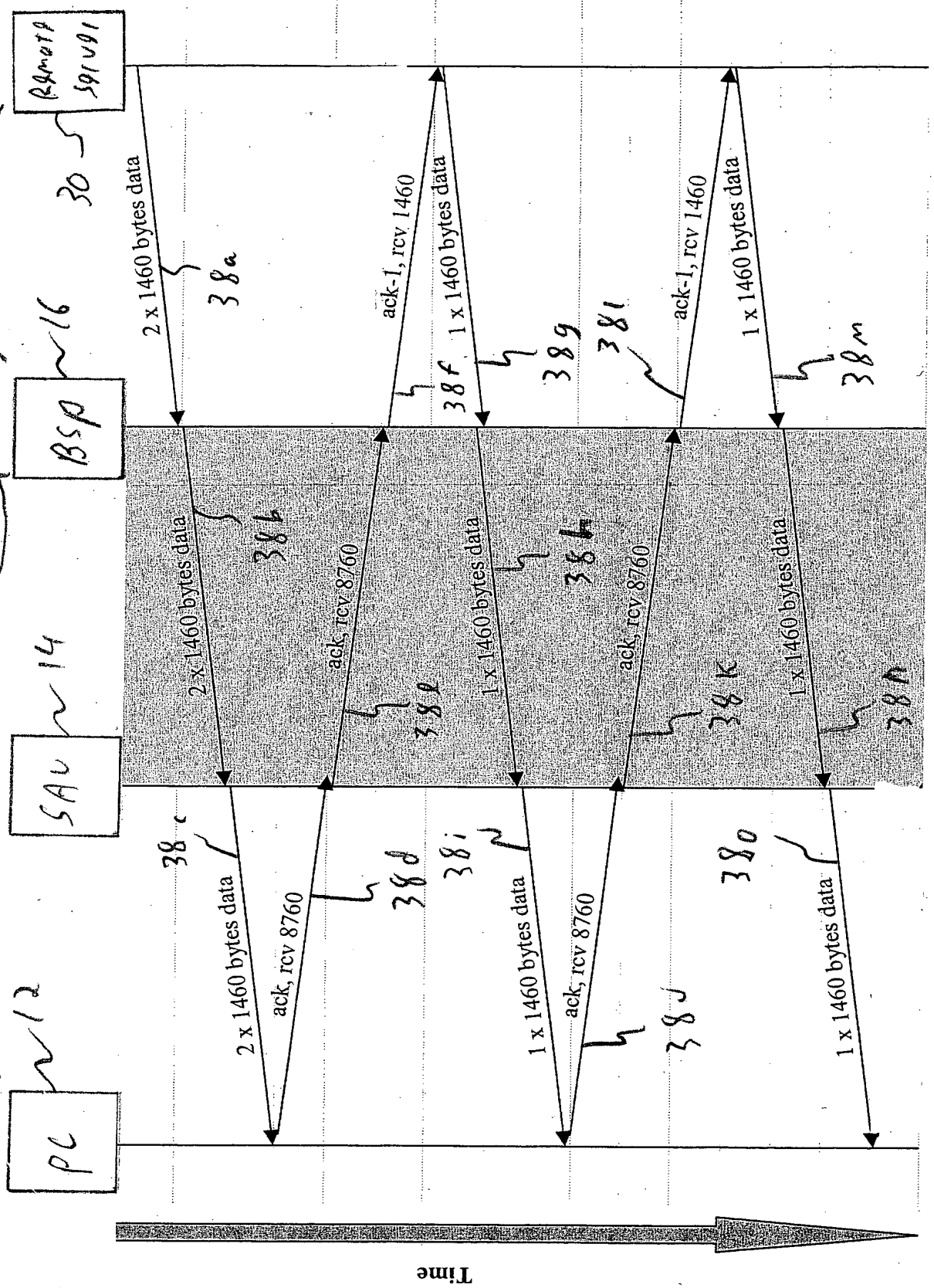
24, 18, 28
26
24
PC
12
SAU
14
BSP
16
Remote Srvr
20
2 x 1460 bytes data
38a
ack-1, rcv 1460
38f
1 x 1460 bytes data
38g
38l
ack-1, rcv 1460
1 x 1460 bytes data
38m
2 x 1460 bytes data
38b
ack, rcv 8760
38e
1 x 1460 bytes data
38h
ack, rcv 8760
38k
1 x 1460 bytes data
38n
38c
2 x 1460 bytes data
ack, rcv 8760
38d
38i
1 x 1460 bytes data
ack, rcv 8760
38j
38o
1 x 1460 bytes data
Time

Fig. 6

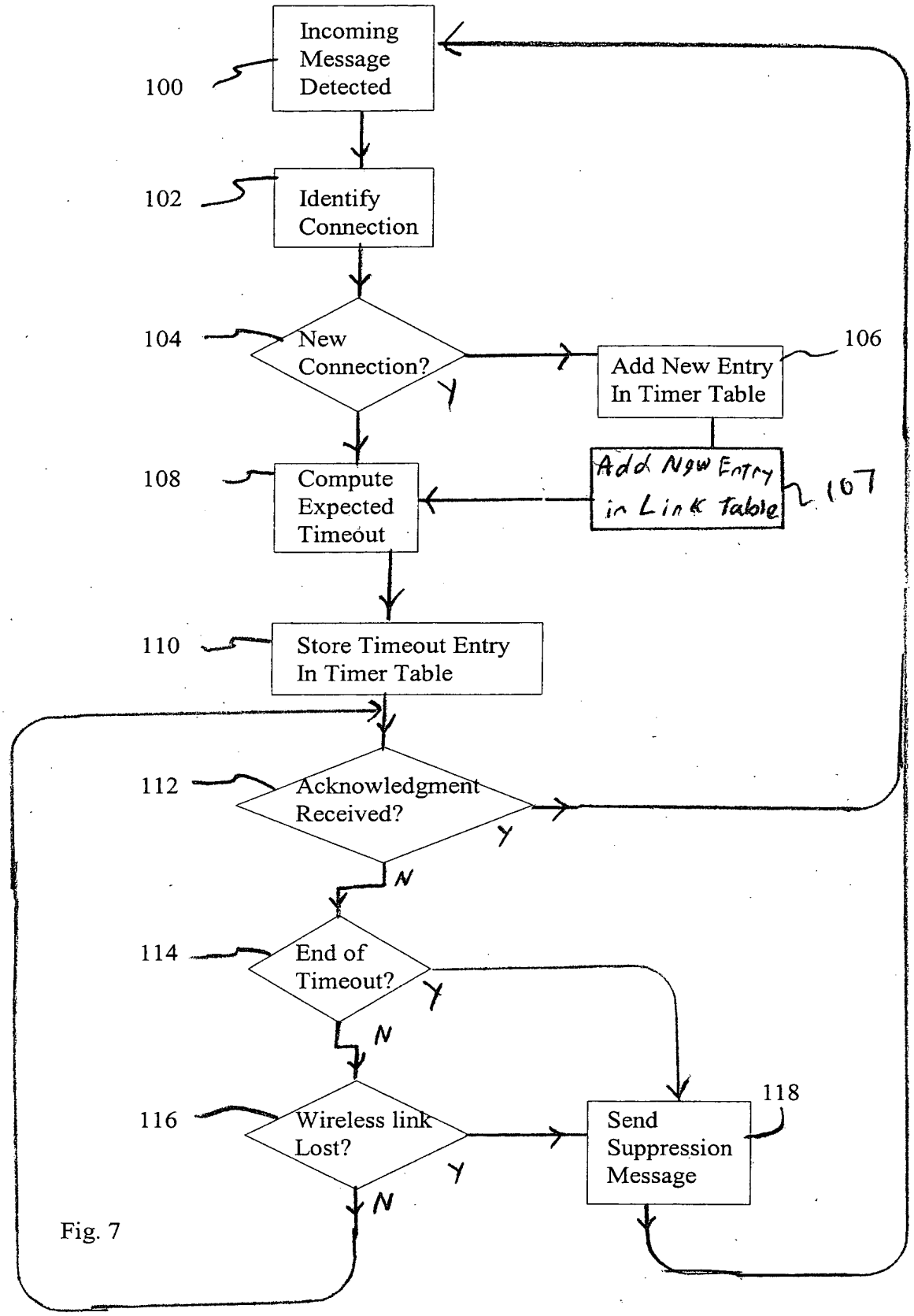
Incoming Message Detected
100
Identify Connection
102
New Connection?
104
Y
Add New Entry In Timer Table
106
Add New Entry in Link Table
107
Compute Expected Timeout
108
Store Timeout Entry In Timer Table
110
Acknowledgment Received?
112
Y
N
End of Timeout?
114
Y
N
Wireless link Lost?
116
Y
N
Send Suppression Message
118

Fig. 7

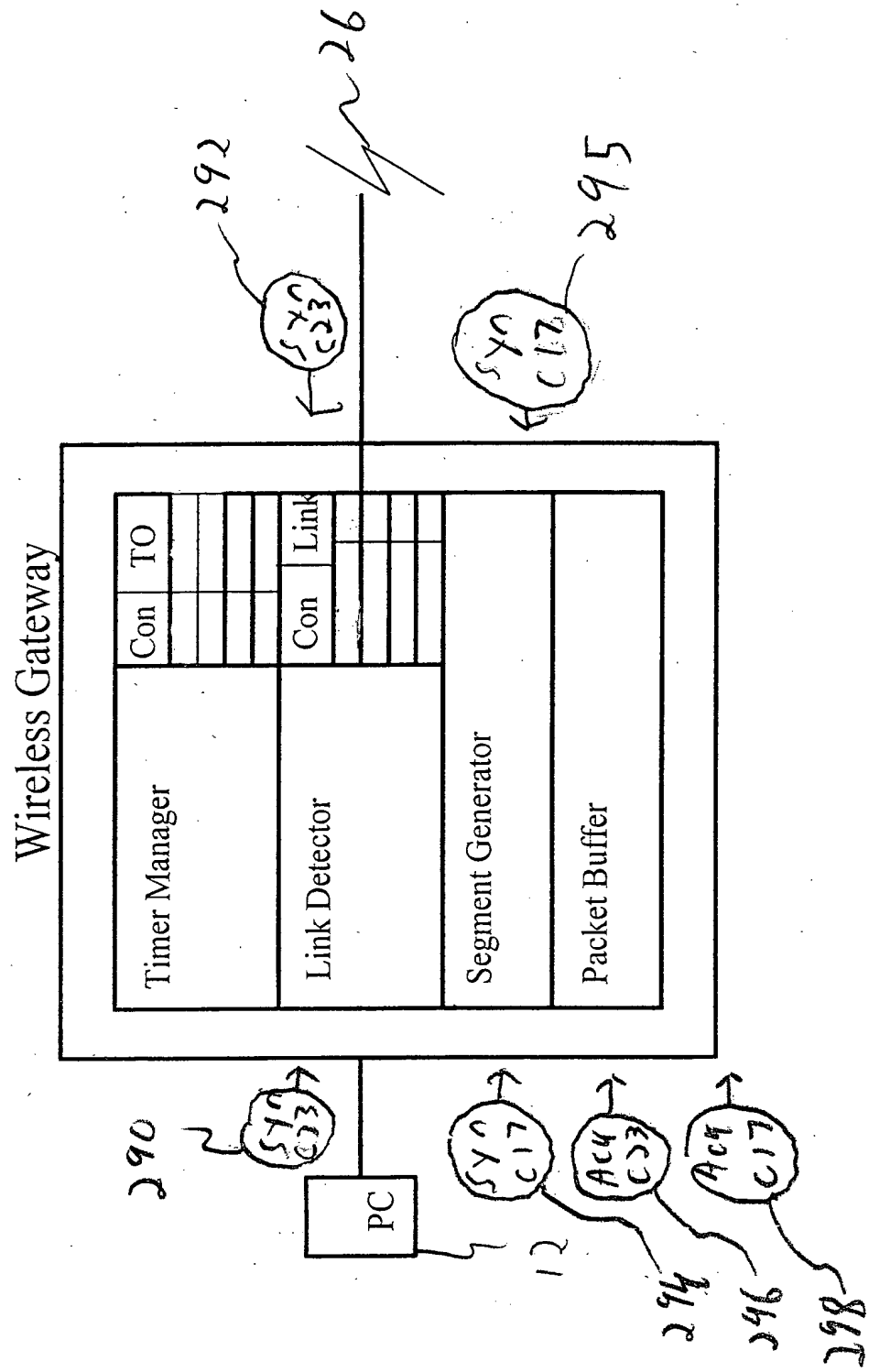
Wireless Gateway
Timer Manager
Con
TO
Link Detector
Con
Link
Segment Generator
Packet Buffer
PC
290
292
26
295
12
294
296
298

Fig. 8a

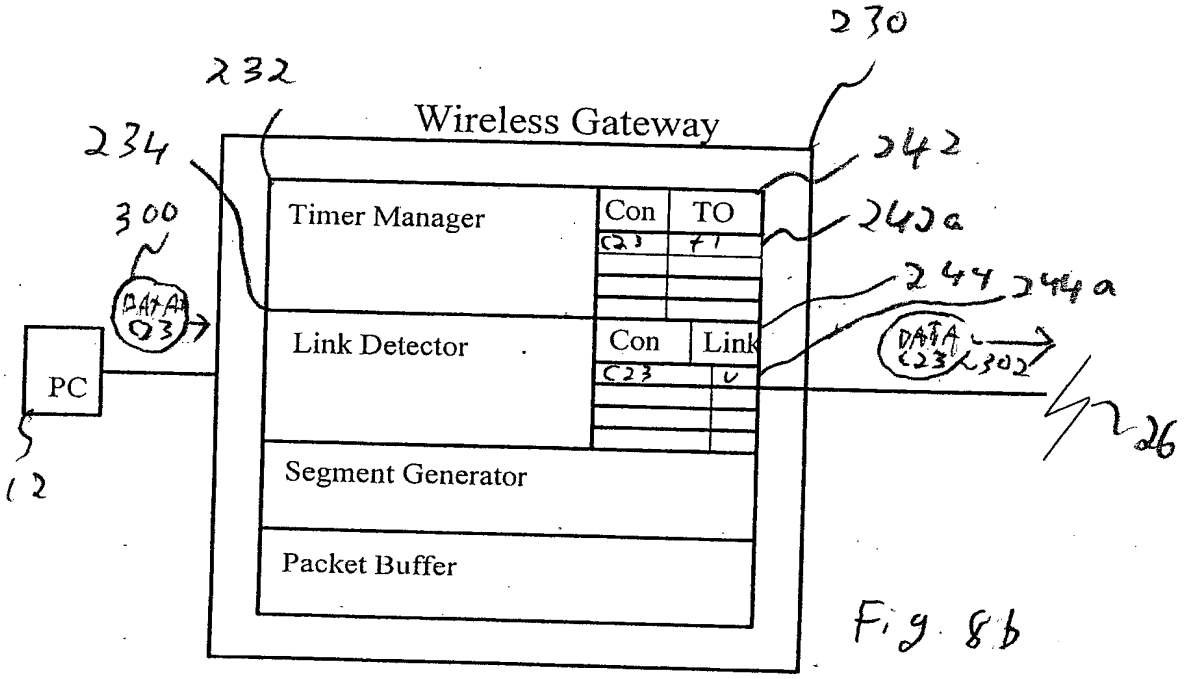

Fig. 8b

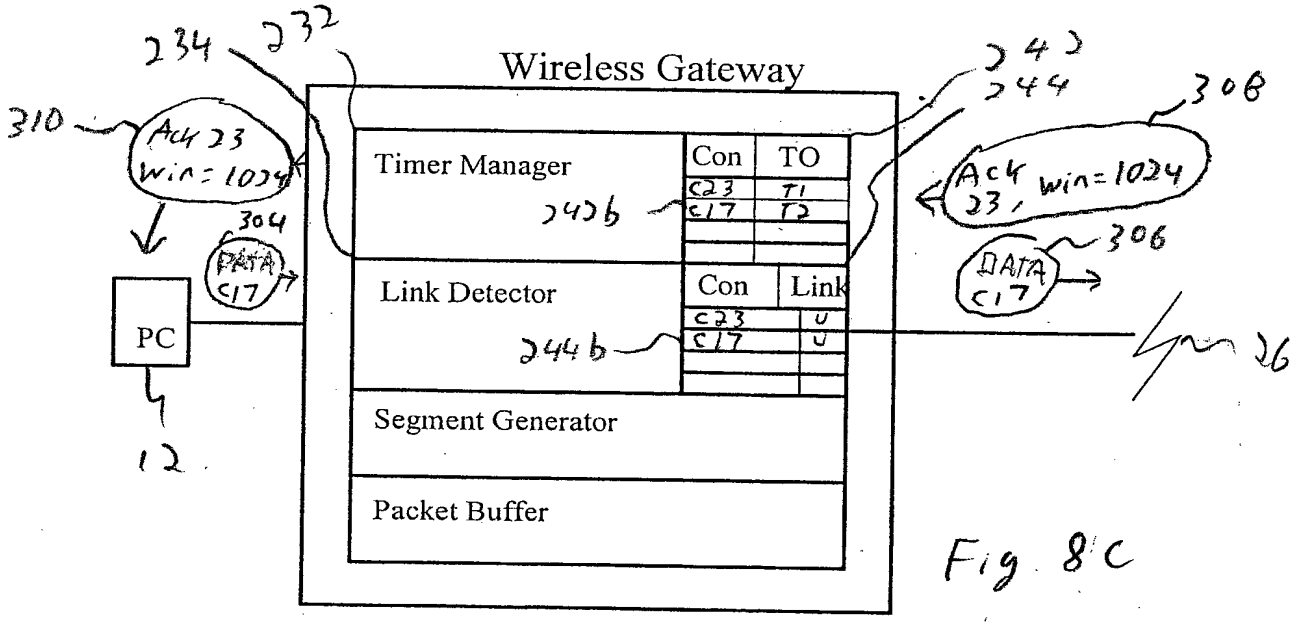

Fig. 8c

t < t1

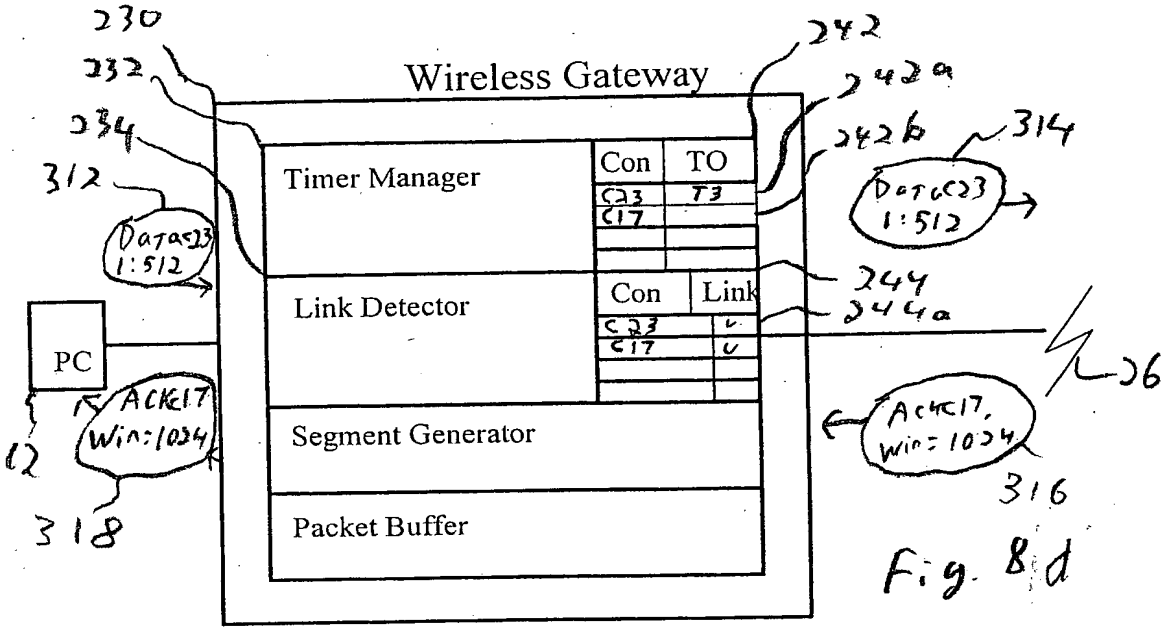

Fig. 8d

time < T2

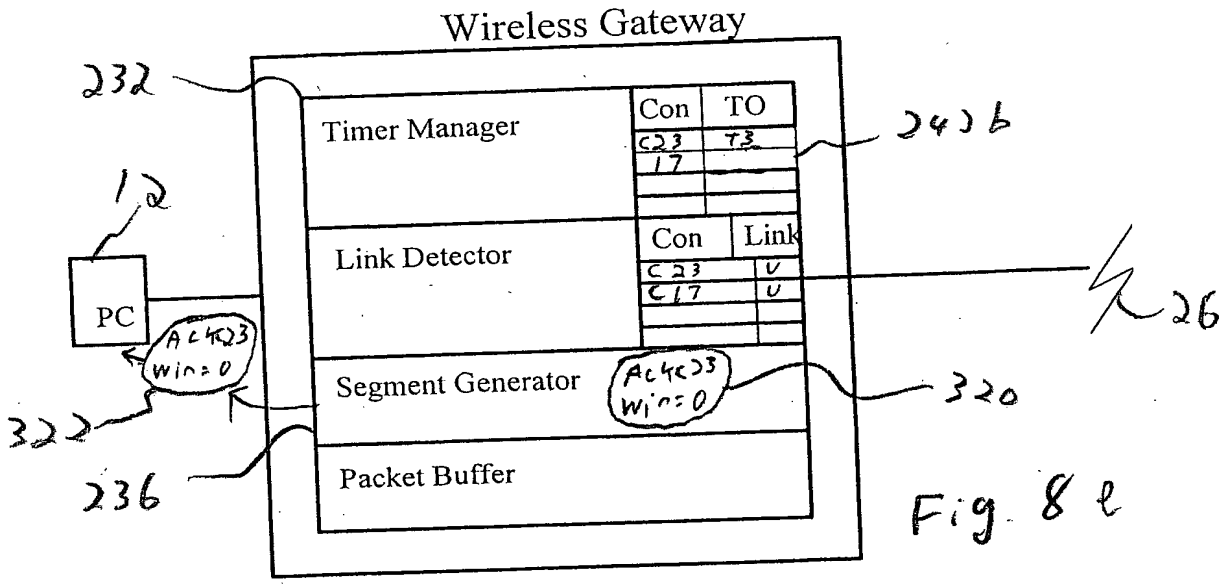

Fig. 8e

time = T3

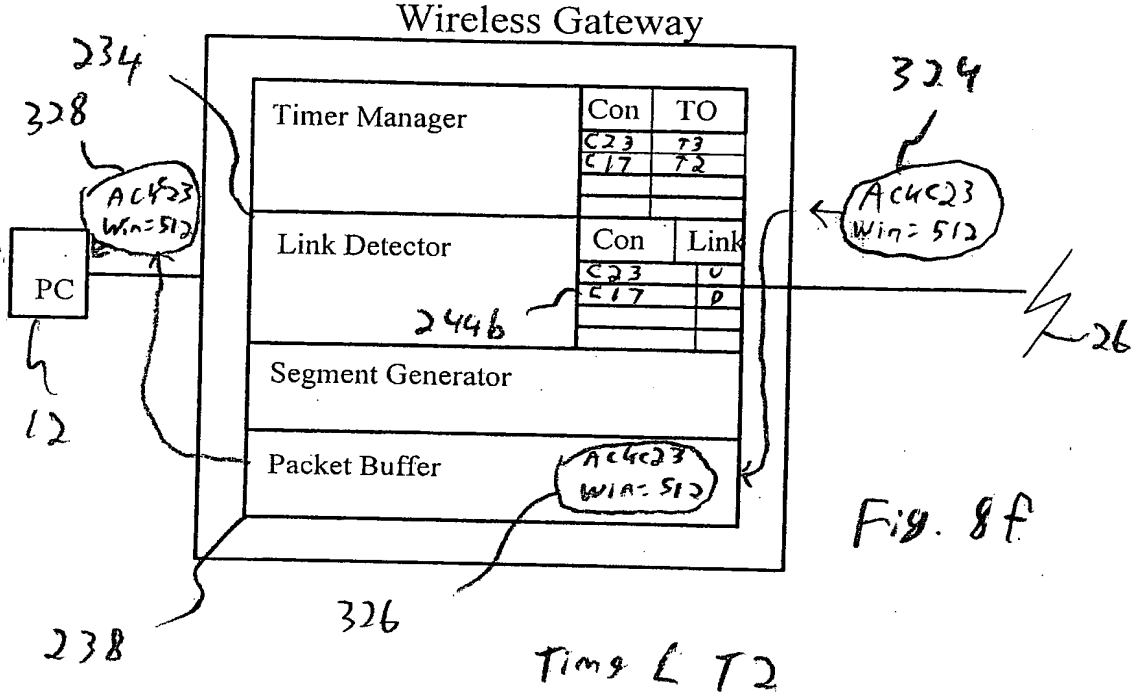

Fig. 8f

Time L T2

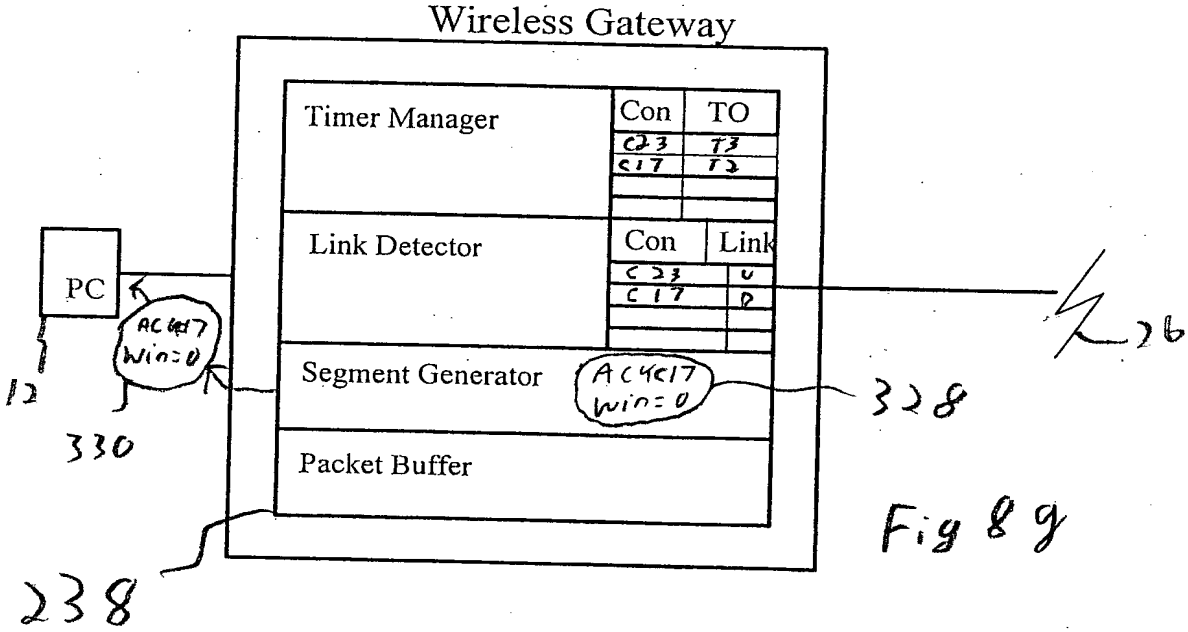

Fig 8g